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AUTHOR Lu, Lucia Y.
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ABSTRACT

At the beginning of the twenty-first century, there is a dramatic change in society. Teachers and educators are confronting the challenges of more accountability to fulfill the increasing demands of multicultural education in urban areas. Wise (2000) and Freire (1993) declare that society requires the development of an especially flexible, critical spirit when it begins to transit from one epoch to another. Teacher educators are becoming the change agents of critical thinking. The concepts of inference (abduction, deduction, and induction) and change agentry "ABCD" (Adopters, Black box, Change agents, and Domain) can be implemented in teacher education. Furthermore, teacher candidates can be encouraged to employ intellectual freedom to innovate and utilize new strategies with their students in the classroom. Inference expands teacher candidates' potential for critical thinking in a society of transition. Change management skills in ABCD keep them on the right track as change agents. (Contains 17 references.) (SM)

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Running head: INFERENCE MAKES TEACHER CANDIDATES THE CHANGE AGENTS

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Inference Makes Teacher Candidates the Change Agents

Lucia Y. Lu

Clark Atlanta University

1612 Concord Meadows Dr. Smyrna, GA 30082

Phone/Fax: 770-319-9653

E-mail: **lucialu@msn.com**

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Abstract

In the beginning of the twenty-first century, we experience a dramatic change in our society. Teachers and teacher educators confront the challenges of more accountability to fulfill the increasing demands of the multicultural education in urban areas. Wise (2000) and Freire (1993) declares that a society requires the development of an especially flexible, critical spirit when it begins to transit from one epoch to another. It is obvious that teacher educators will be the change agents of critical thinking. The researcher implements the concepts of inference (Cunningham, 1998): abduction, deduction and induction, and change agentry "ABCD" (Dormant, 2000) in teacher education. She encourages the teacher candidates to employ the intellectual freedom (Smith, 1988) to innovate and utilize new strategies for their kids in the classroom - a small world - when they go out to the fields for internship. She challenges her students to exercise "Inference for Innovation" and manage "Change Skills." Inference expands teacher candidates' potential for critical thinking in a society of transition. Change management skills "ABCD" keep them on the right track of change agentry.

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Statement of the Problem

In the beginning of the twenty-first century, we experience a dramatic change in our society. The easy access to the Internet makes "sky the limit" in the transmission of information and the acquisition of knowledge (Arends, 2000). Changes in technology, business, industry, communication and social context happen daily. Teachers and teacher educators confront the challenges of more accountability to fulfill the increasing demands of the inclusive and multicultural education in urban areas (AACTE, 2001). On the one hand, they are compelled to raise kids' scores on both the traditional standardized tests and the new "high-stakes" tests; on the other hand, these tests are criticized for leading them to dumb-down teaching, without helping kids become critical, creative, curious thinkers (Lemann, 1999). Freire (1993) declares that a society requires the development of an especially flexible, critical spirit when it begins to transit from one epoch to another. In education, Arthur Wise (2000), the president of the NCATE, makes a similar statement that teachers should use strategies to develop critical thinking for problem solving. It is obvious that teaching critical thinking will be the trend of teacher education in a society of transition, and teacher educators will be the change agents.

Literature Review

Inference

Since last century behaviorism has been the prevailing theory that views learning as a response to the stimuli existing in the environment. In this stimulus-response notion rooted in laboratory setting, humans are passive reactor learning through the process of imitation, reinforcement and shaping (Norton, 1997). The S-R unit can be used to examine simple tasks, but not the complex behavior.

Humans are thinking beings (Vygotsky, 1934; Zahorik, 1995) bearing insights, reasoning power, and the ability to make decisions. They have "minds" to select stimuli to respond and to choose the best response that makes sense to them. This is the S-MIND-R unit explaining the rational, logical and cognitive process that occurs between stimuli and responses.

To Peirce, "anomalies" which humans encounter in the real world will drive the process of inquiry into the motion of inference (Neilsen, 1989). Peirce's triadic model of inference (see Figure 1) is the endless cycle of reasoning (Cunningham, 1992, 1998) which composes the following processes:

abduction – learners generate hypotheses from their life experience, prior knowledge, conscience or sociocultural modes to deal with the anomalies,

deduction – learners keep testing hypotheses against their social context, and

induction – learners confirm or reject or modify the previous hypotheses.

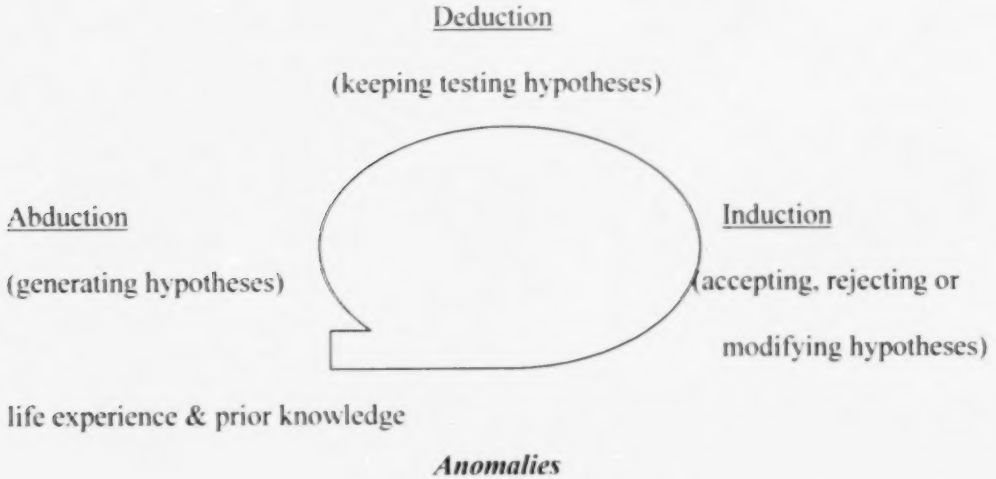

Figure 1

Humans as thinking beings acquire new knowledge by exercising the endless cycle of inference. Findings in neurobiology reveal that new born babies are born with the intellectual competence to instinctively respond to the environment for survival and for the exploration of the new world (Gardner, 1985; John-Steiner, 1985). Education is to mobilize this heavenly bestowed intellectual competence based on learners as inquirer, not the passive transmission of knowledge (Short, Haste, & Burke, 1996). Instruction as inquiry is to (1) activate prior knowledge, (2) acquire knowledge, (3) understand knowledge (4) use knowledge, and (5) reflect on knowledge (Zahorik, 1995).

Change Agentry

From the historical perspective on education, we confront a lot of struggles to change to continue (Shannon, 1990) such as the concept of teaching, approaches in literacy, the reform of school system, the creation of standardized tests for a classless society and educators' reaction in terms of alternate assessment, etc. Many enthusiastic educators as change agents do not feel secure, comfortable or satisfied with the prevailing instruction strategies or systems, and they always exercises their inference to initiate innovation for the survival or benefits of themselves or of the community (Dormant, 1986, 2001). Usually the change agents will face a lot of expected and unexpected resistance while they try to convince their colleagues of the benefits of implementing the innovation in the institution (Dormant, 1997). For example, Whole Language Approach or The Basal Reader Approach for reading instruction has been an issue under debate since last century.

In The ABCD's of Managing Change, Dormant (1986, 1997), professor and change consultant in education, business, the military, and social services, proposed a conceptual framework for the practice of change agentry:

A: adopters who will accept, implement and utilize the innovation

B: black box, the innovation invented by the change agents to deal with the anomalies, and to improve the operation in the community

C: change agent(s) who feel not safe, comfortable, satisfied with the current situation in the community and plan to change. Change agents are innovators. They initiate the change, schedule the change, create climate for change, find the support for change and resistance against change, involve the people who support change, and convince the people who resist the change, launch or modify the change.

D: domain where the innovation implements and the climate for change.

Since 1980, Dormant and her change team proposed a series of management skill for change such as "technology strategies" for the evaluation of innovation; "interpersonal strategies" to deal with the resistance in the domain, to create opportunity for change, to assess the climate for change, to implement human performance by engaging the colleagues into the change, and to be effective leader to take lead in the change, etc.

The Application of Inference and Change Agentry to Teacher Education

Humans are constructors of their own knowledge, rather than reproducers of some else's knowledge (Zahorik, 1995), and instruction is based on learners as inquirers instead of instructor's transmission of knowledge (Short, Harste, & Burke, 1996). The researcher implements the concepts of inference and change agentry in teacher education. She is not very ambitious to expect the teacher candidates to make any change on the top hierarchy of the school system, or on the existing teaching theories. She encourages the teacher candidates to employ the intellectual freedom (Smith, 1988) to innovate and utilize new strategies for their kids in the

classroom - a small world. This is the conceptualization of inference and change agentry in teacher education.

As teacher educator, the researcher trains her students, the teacher candidates, to be change agents in their small world when they go out to the field school sites for internship. She challenges her students and requires them to conduct the following changing activities:

Part 1: Inference for innovation

(1) Write observation and critiques on the classroom setting, classroom management, the individual student' learning behavior, the small group activity, the teacher talk, and the strategies the coordinating teachers used.

(2) Think about new strategies or modify the existing ones to cope with the problems prevailing in the field school sites.

(3) Go to the Internet for at least ten articles related to the new strategy. The theories should be able to support the implementation of the new strategy.

(4) Talk with their supervising professor, coordinating teachers and peers about the new strategies.

(5) Write lesson plans for the implementation of the new strategies they plan to use.

(6) Use the new strategies in their instruction when they go out again to the field sites.

(7) Collect kids' artifacts in the field sites.

(8) Analyze the data, and reflect the effectiveness of their innovation.

(9) Confirm, reject or modify their strategies for future implementation.

(10) Write their field journals and submit the findings to the conferences such as National Reading Conference (NRC), Georgia Council of Teachers of English (GCTE), International Reading Association (IRA) for presentation.

Part 2: Managing Change Skills

(1) Identify the four factors of the ABCD's of Managing Change (Dormant, 1986) based on the situated world.

(2) Create climate for change.

(3) Demonstrate the strength of the innovation and the weakness of the old strategy from The aspects of security, perfection, advantages, convenience, economical and durability (Eli Lilly, 1980).

(4) Analyze the possible support and the expected resistance inside the institution.

(5) Use linguistic, logical, interpersonal intelligences to convince the people who are against the change.

(6) Launch the change.

Conclusion

Inference expands teacher candidates' potential for critical thinking in a society of transition. Change management skills keep them, the future change agents, on the right track of change agentry. For the benefits of the students and the community, classroom teachers are expected to be empowered to exercise their inference as well as critical consciousness (Freire, 1993) for changes in their small world. Since inference is the endless cycle of reasoning, and the society is in the phase of transition, the change must always be an on-going process that calls for frequent modification. The change is merely a hidden stream in the beginning, eventually it will overflow as a mainstream. Educators and teacher educators have to struggle to continue, and continue to struggle (Shannon, 1990).

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